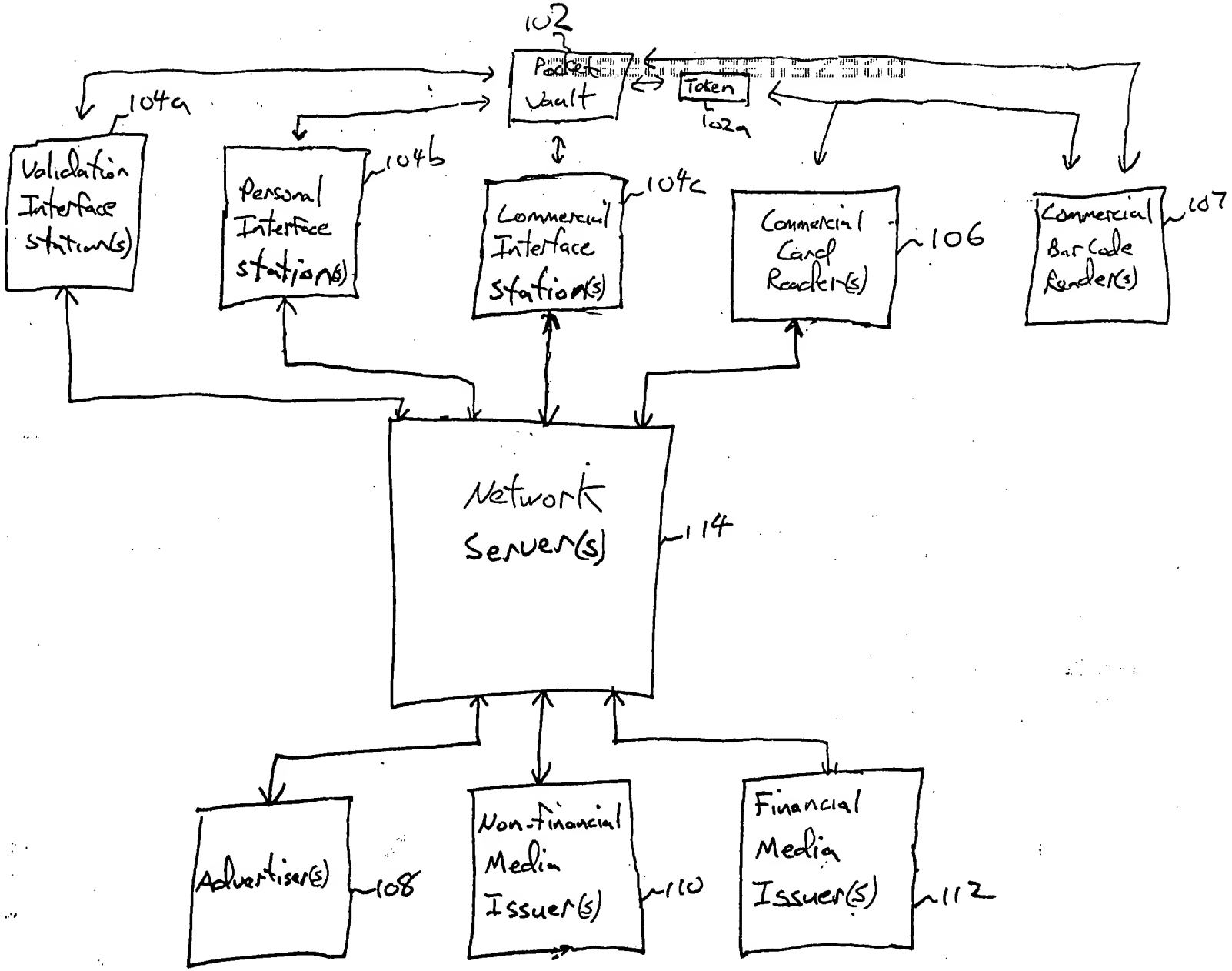
102
Vault
Token
102a
104a
Validation Interface station(s)
104b
Personal Interface station(s)
104c
Commercial Interface station(s)
Commercial Card Reader(s)
106
Commercial Bar Code Reader(s)
107
Network Server(s)
114
Advertiser(s)
108
Non-financial Media Issuer(s)
110
Financial Media Issuer(s)
112

Fig. 1

20020 2015200

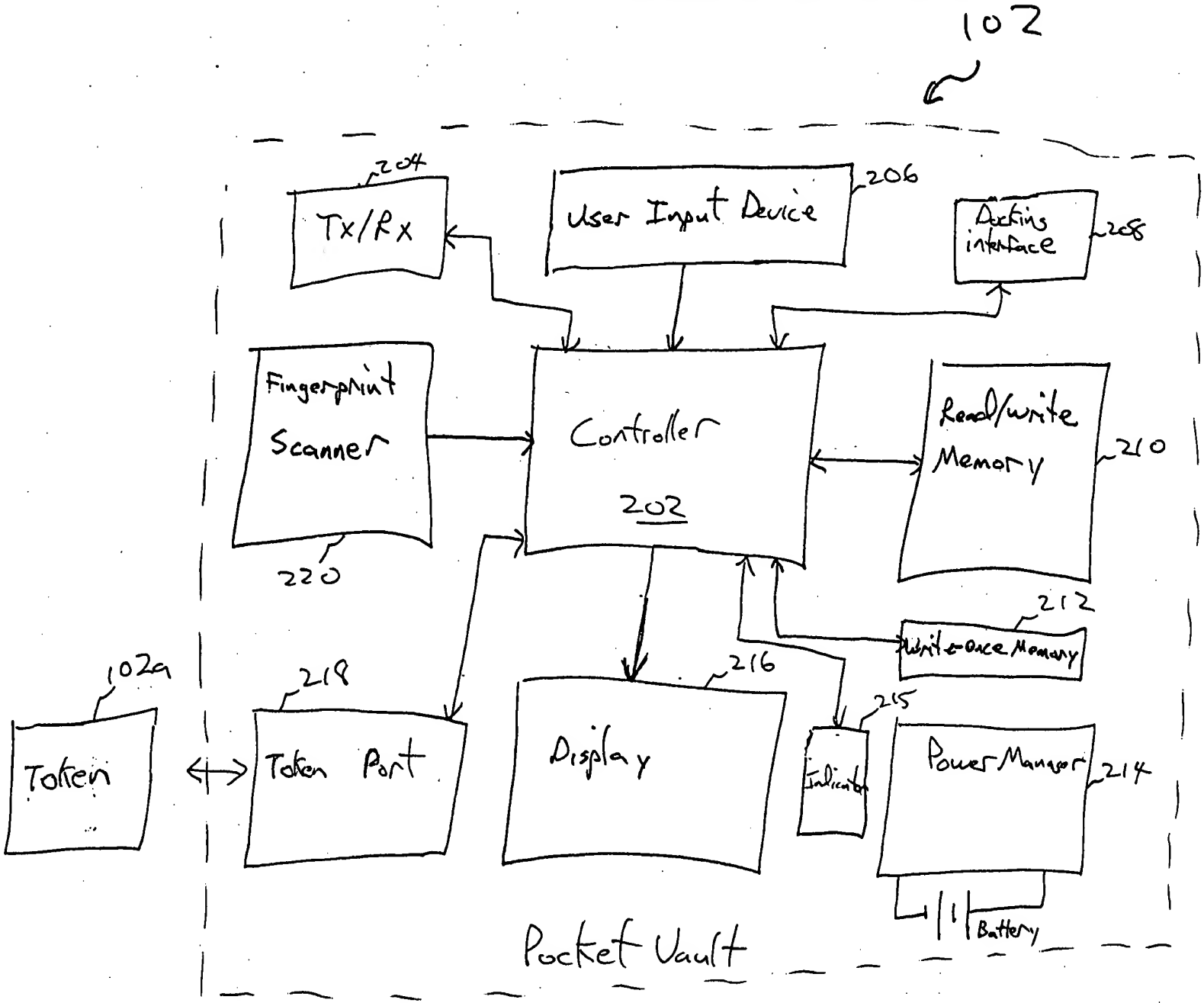

Fig. 2

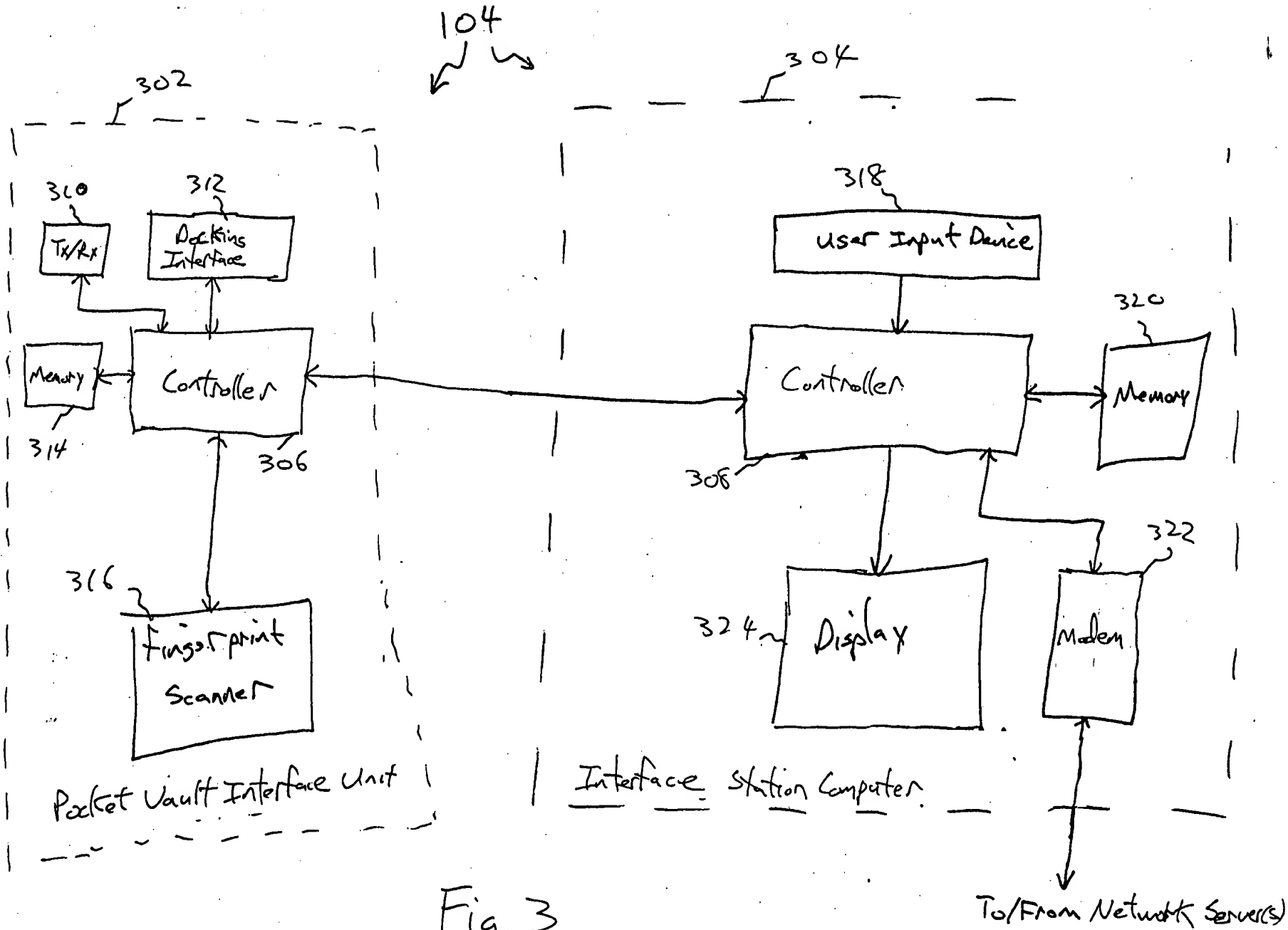
104
302
304
310
Tx/Rx
312
Docking Interface
Memory
314
Controller
306
316
Fingerprint Scanner
Pocket Vault Interface Unit
318
User Input Device
320
Controller
Memory
308
322
324
Display
Modem
Interface Station Computer
To/From Network Server(s)

Fig. 3

08820 0815820

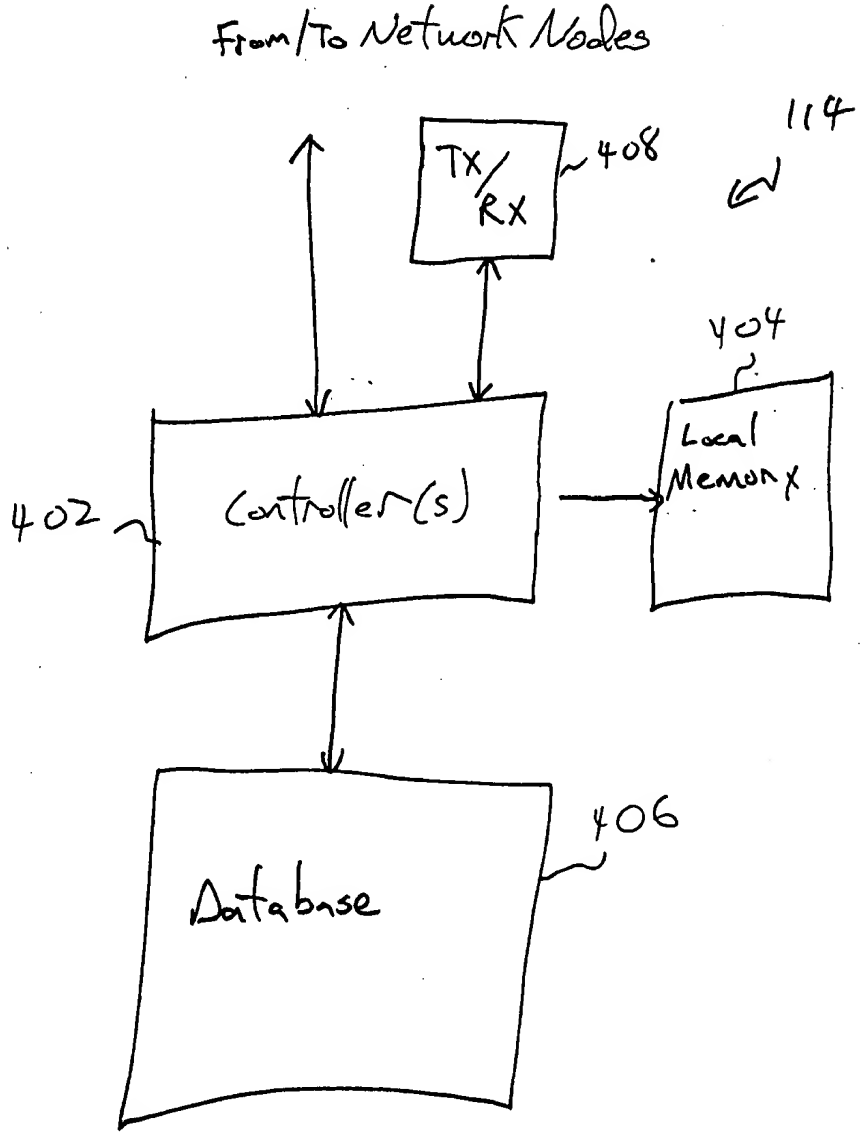

Fig. 4

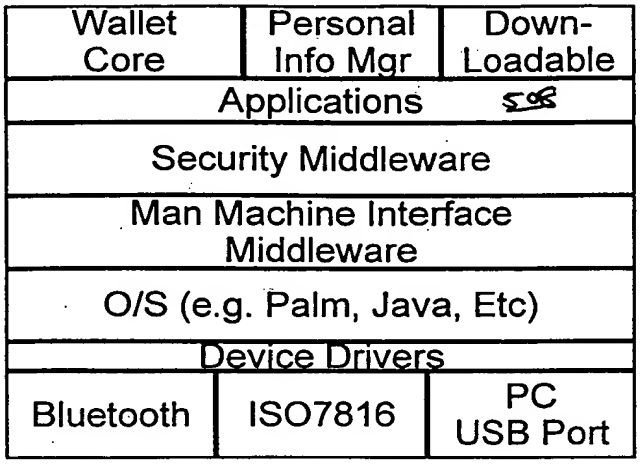
Wallet Core
Personal Info Mgr
Down-Loadable
Applications
Security Middleware
Man Machine Interface Middleware
O/S (e.g. Palm, Java, Etc)
Device Drivers
Bluetooth
ISO7816
PC USB Port

Fig. 5

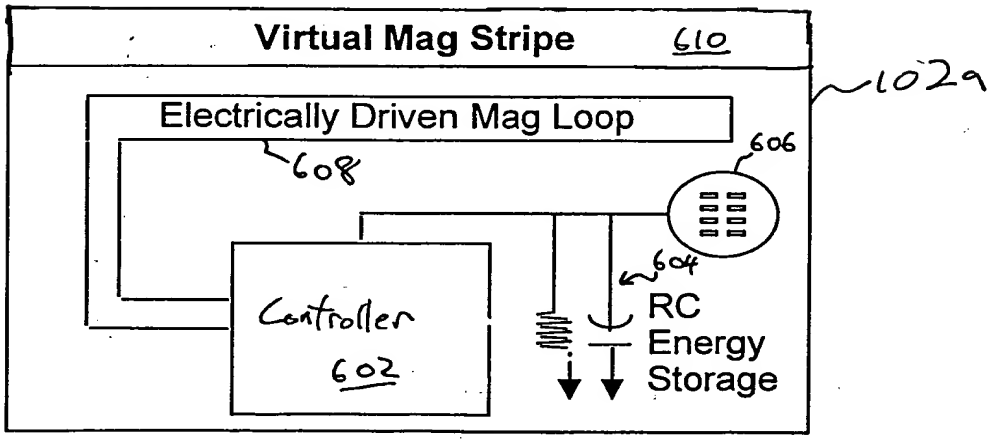
Virtual Mag Stripe
610
1029
Electrically Driven Mag Loop
608
606
604
Controller
602
RC
Energy
Storage

Fig. 6

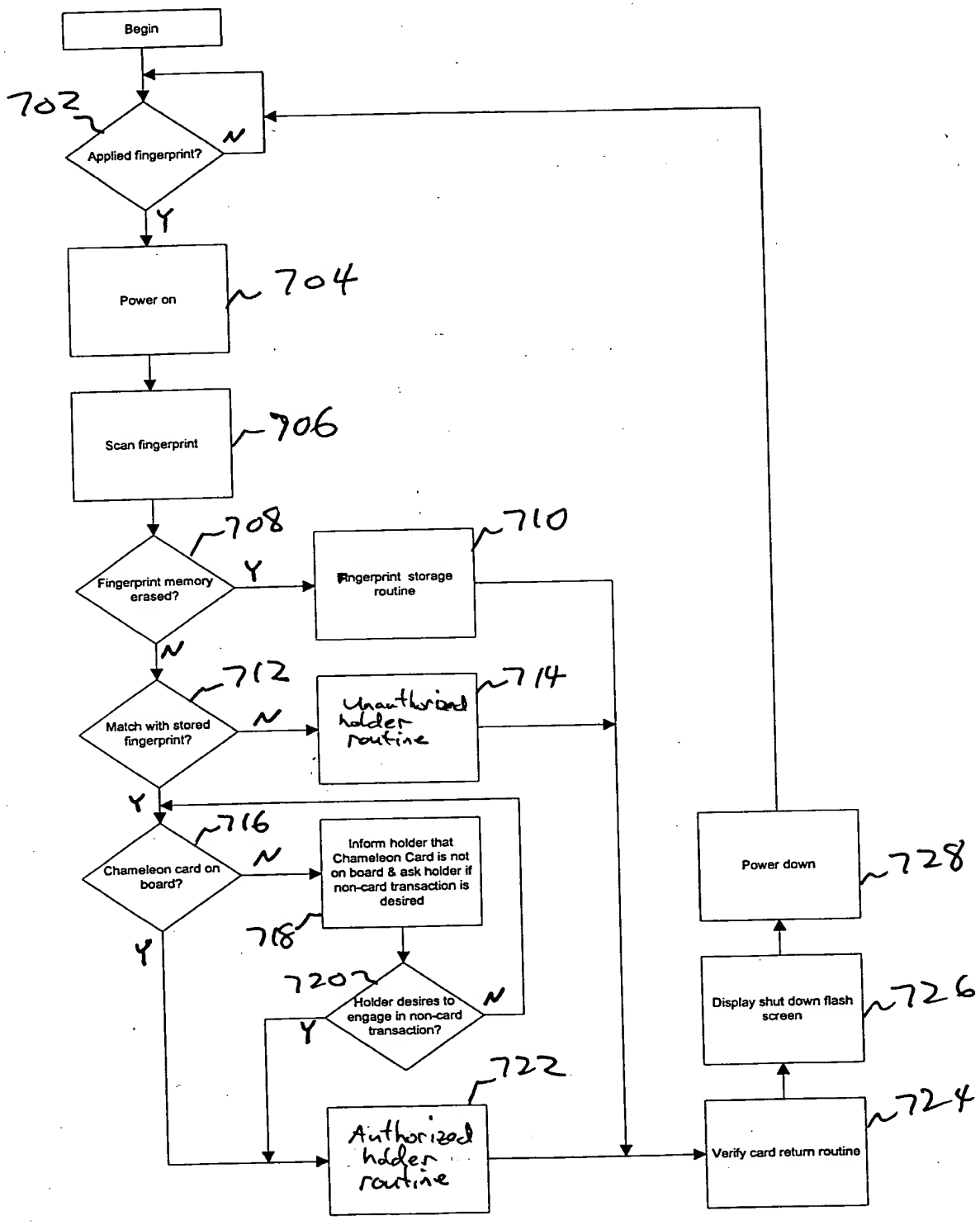
Begin
702
Applied fingerprint?
N
Y
Power on
704
Scan fingerprint
706
708
Fingerprint memory erased?
Y
710
Fingerprint storage routine
N
712
Match with stored fingerprint?
N
714
Unauthorized holder routine
Y
716
Chameleon card on board?
N
Inform holder that Chameleon Card is not on board & ask holder if non-card transaction is desired
718
Y
720?
Holder desires to engage in non-card transaction?
N
Y
722
Authorized holder routine
Verify card return routine
724
Display shut down flash screen
726
Power down
728

Fig. 7

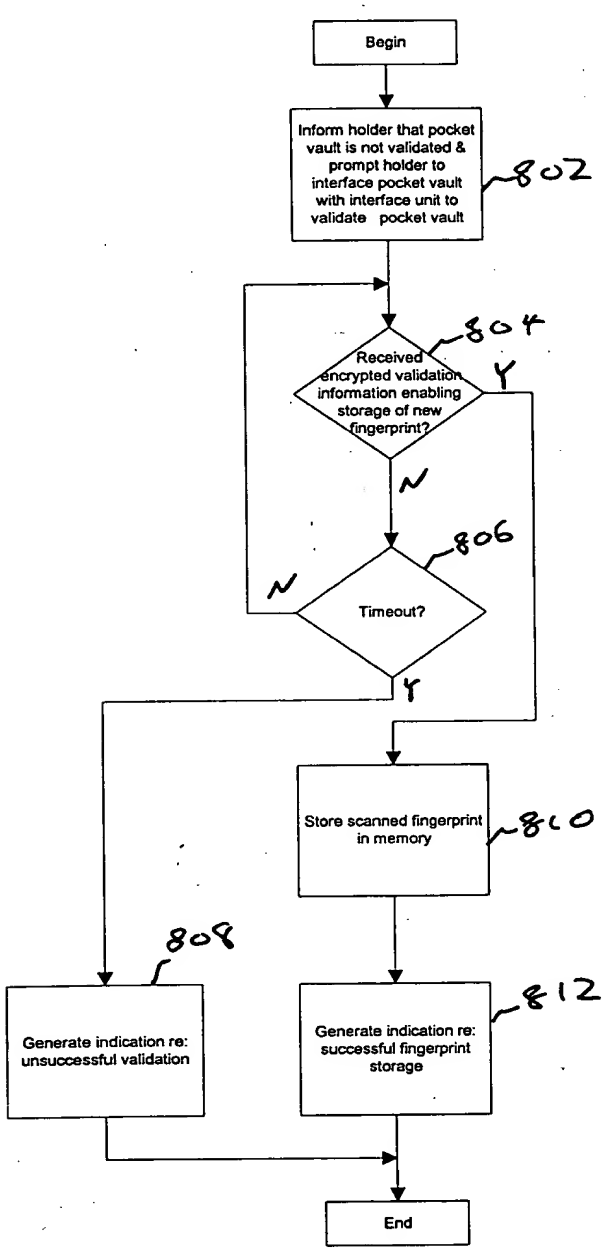
710
Begin
Inform holder that pocket vault is not validated & prompt holder to interface pocket vault with interface unit to validate pocket vault
802
Received encrypted validation information enabling storage of new fingerprint?
804
Y
N
Timeout?
806
N
Y
Store scanned fingerprint in memory
810
Generate indication re: unsuccessful validation
808
Generate indication re: successful fingerprint storage
812
End

Fig. 8

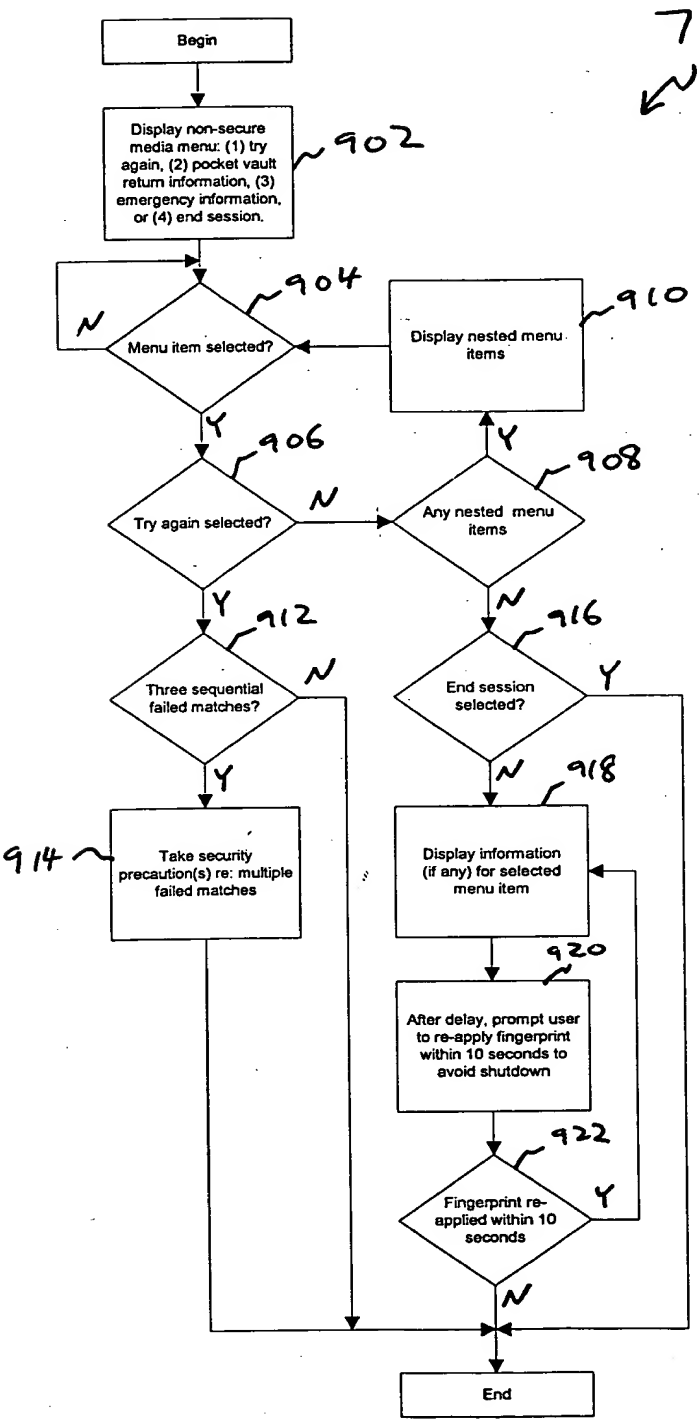
714
Begin
Display non-secure media menu: (1) try again, (2) pocket vault return information, (3) emergency information, or (4) end session.
902
Menu item selected?
904
N
Y
Display nested menu items
910
Try again selected?
906
N
Y
Any nested menu items
908
Y
N
Three sequential failed matches?
912
N
Y
End session selected?
916
Y
N
Take security precaution(s) re: multiple failed matches
914
Display information (if any) for selected menu item
918
After delay, prompt user to re-apply fingerprint within 10 seconds to avoid shutdown
920
Fingerprint re-applied within 10 seconds
922
Y
N
End

Fig. 9

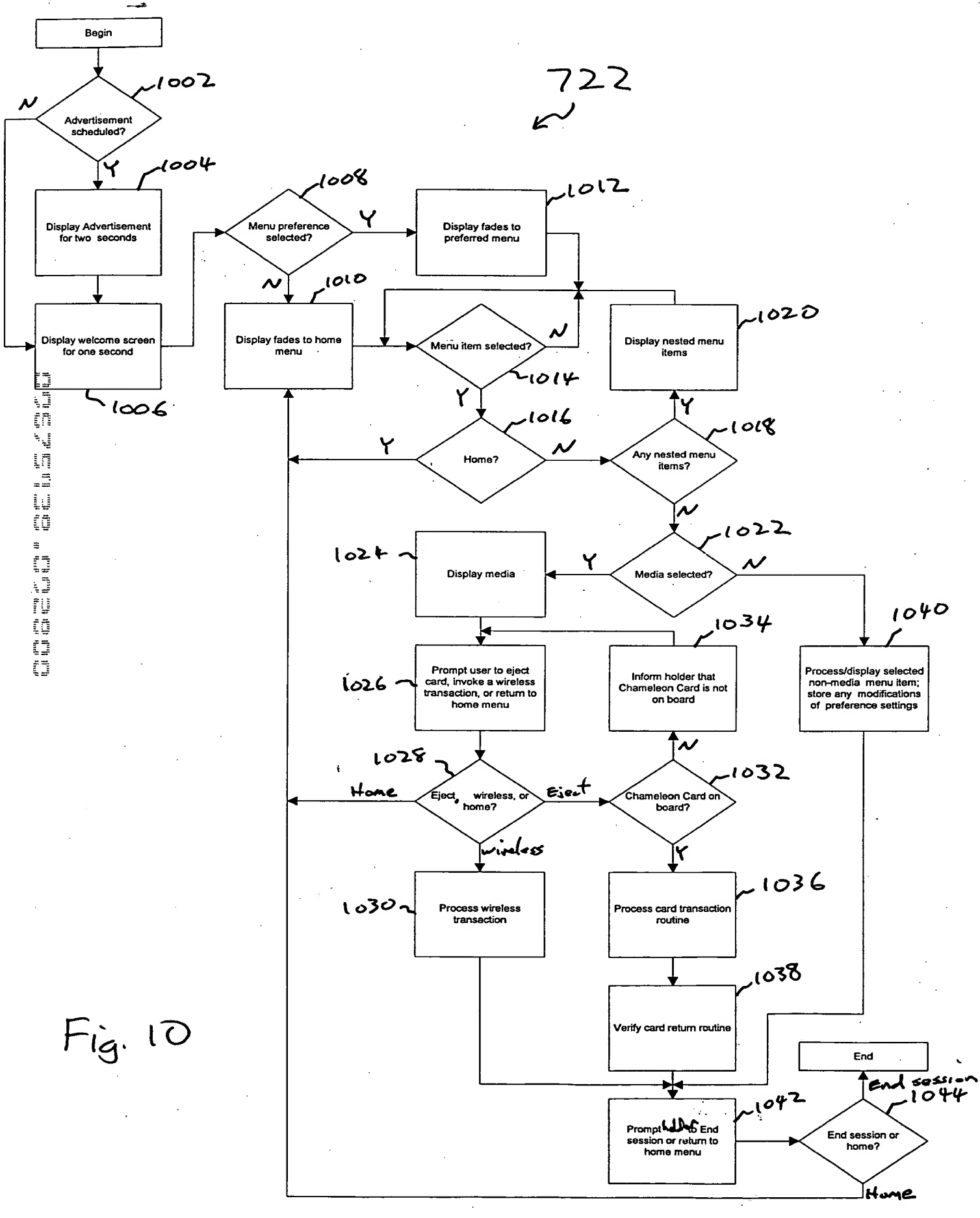
722
Begin
1002
Advertisement scheduled?
N
Y
1004
Display Advertisement for two seconds
1006
Display welcome screen for one second
1008
Menu preference selected?
Y
N
1010
Display fades to home menu
1012
Display fades to preferred menu
Menu item selected?
N
Y
1014
1016
Home?
Y
N
1018
Any nested menu items?
Y
N
1020
Display nested menu items
1022
Media selected?
Y
N
1024
Display media
1026
Prompt user to eject card, invoke a wireless transaction, or return to home menu
1028
Eject, wireless, or home?
Home
Eject
wireless
1030
Process wireless transaction
1032
Chameleon Card on board?
N
Y
1034
Inform holder that Chameleon Card is not on board
1036
Process card transaction routine
1038
Verify card return routine
1040
Process/display selected non-media menu item; store any modifications of preference settings
1042
Prompt to End session or return to home menu
End session
1044
End session or home?
End
Home

Fig. 10

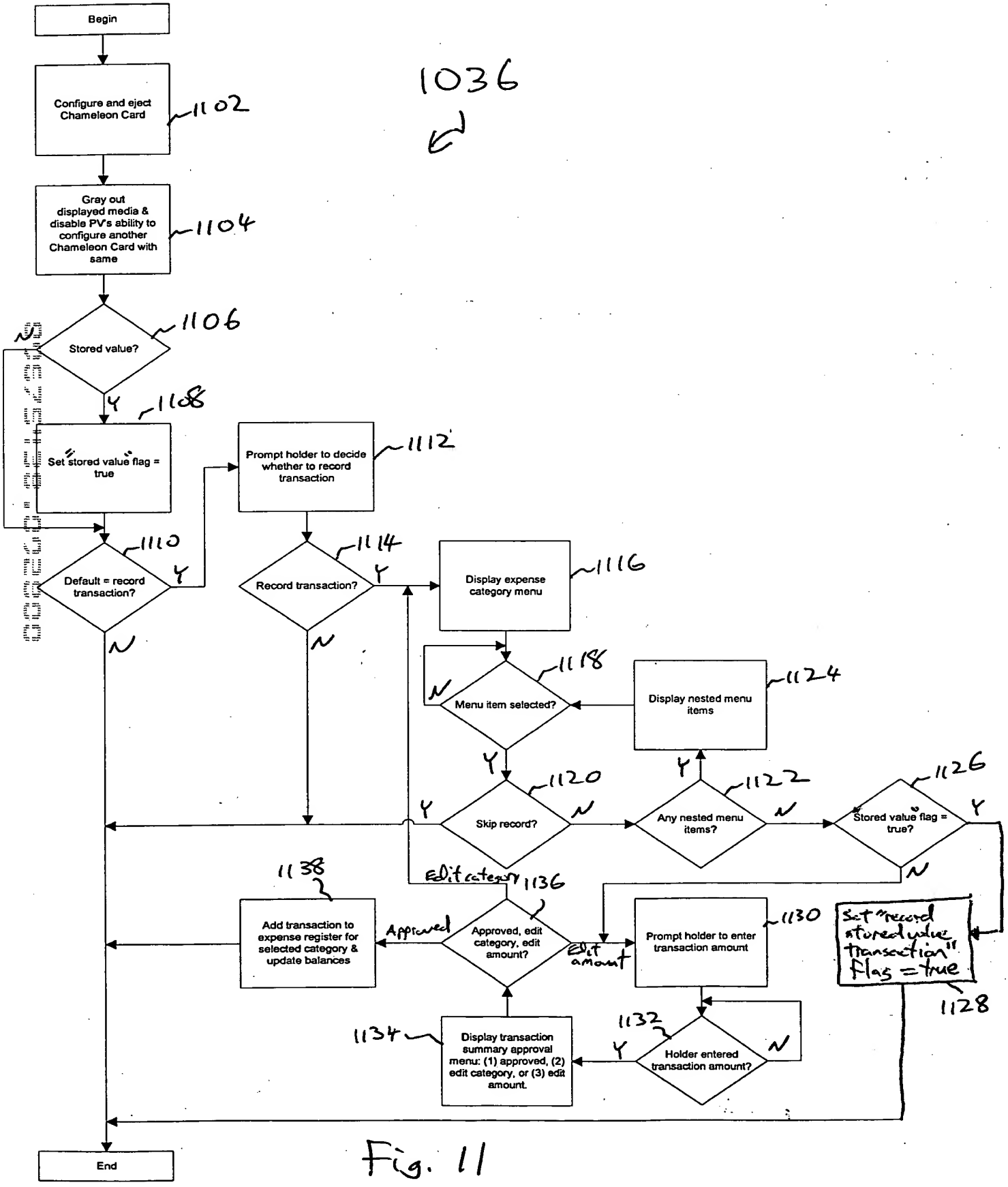
1036
Begin
Configure and eject Chameleon Card
1102
Gray out displayed media & disable PV's ability to configure another Chameleon Card with same
1104
Stored value?
1106
Y
N
Set "stored value" flag = true
1108
Default = record transaction?
1110
Y
N
Prompt holder to decide whether to record transaction
1112
Record transaction?
1114
Y
N
Display expense category menu
1116
Menu item selected?
1118
N
Y
Display nested menu items
1124
Skip record?
1120
Y
N
Any nested menu items?
1122
Y
N
Stored value flag = true?
1126
Y
N
Edit category
1136
Approved, edit category, edit amount?
Approved
Edit amount
Add transaction to expense register for selected category & update balances
1138
Prompt holder to enter transaction amount
1130
Set "record stored value transaction" flag = true
1128
Holder entered transaction amount?
1132
Y
N
Display transaction summary approval menu: (1) approved, (2) edit category, or (3) edit amount.
1134
End

Fig. 11

724

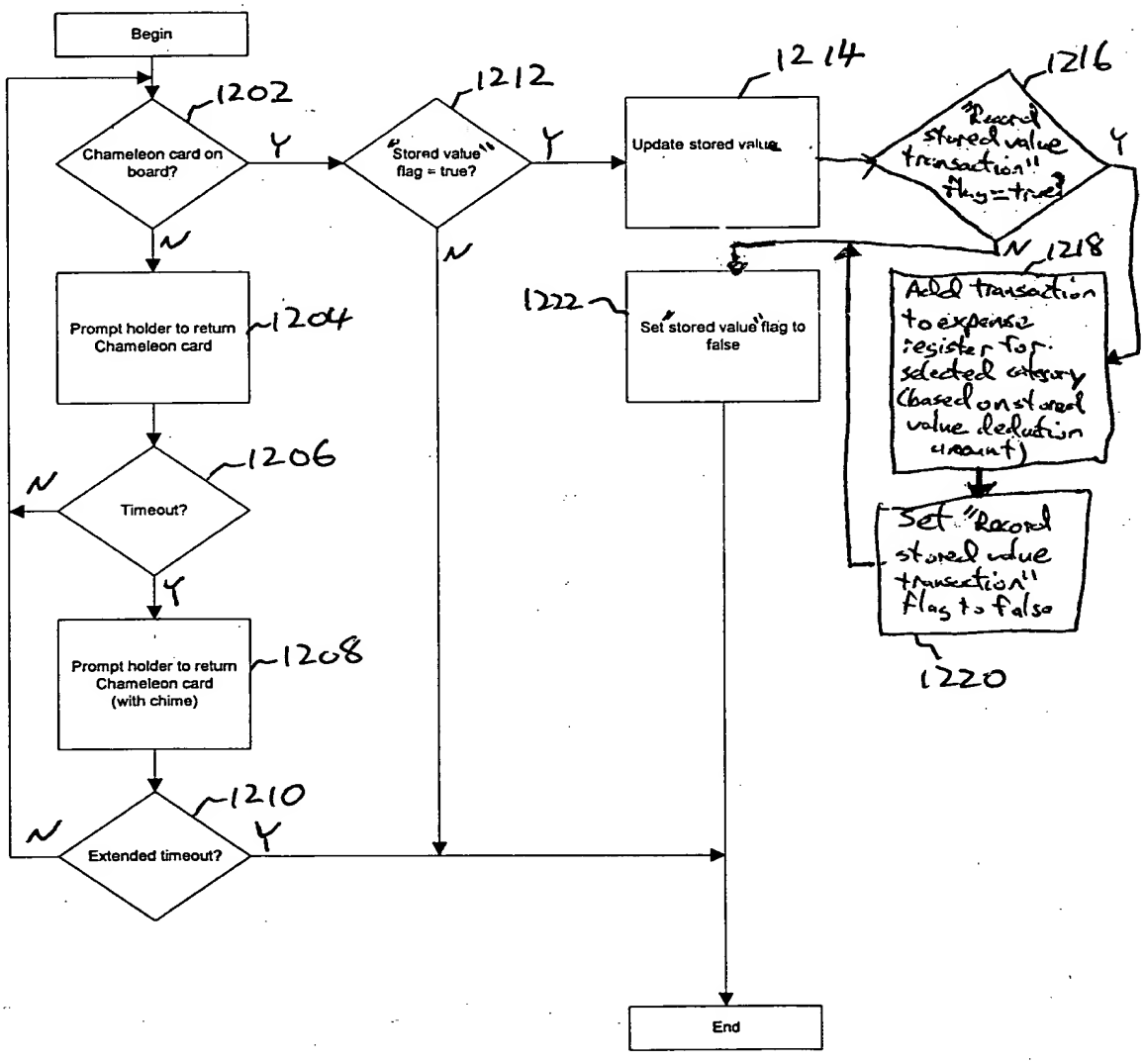
Begin
1202
Chameleon card on board?
Y
N
1212
"Stored value" flag = true?
Y
N
1214
Update stored value
1216
"Record stored value transaction" flag=true?
Y
N
1218
Add transaction to expense register for selected category (based on stored value deduction amount)
Set "Record stored value transaction" flag to false
1220
1222
Set "stored value" flag to false
Prompt holder to return Chameleon card
1204
1206
Timeout?
N
Y
Prompt holder to return Chameleon card (with chime)
1208
1210
Extended timeout?
N
Y
End

Fig. 12

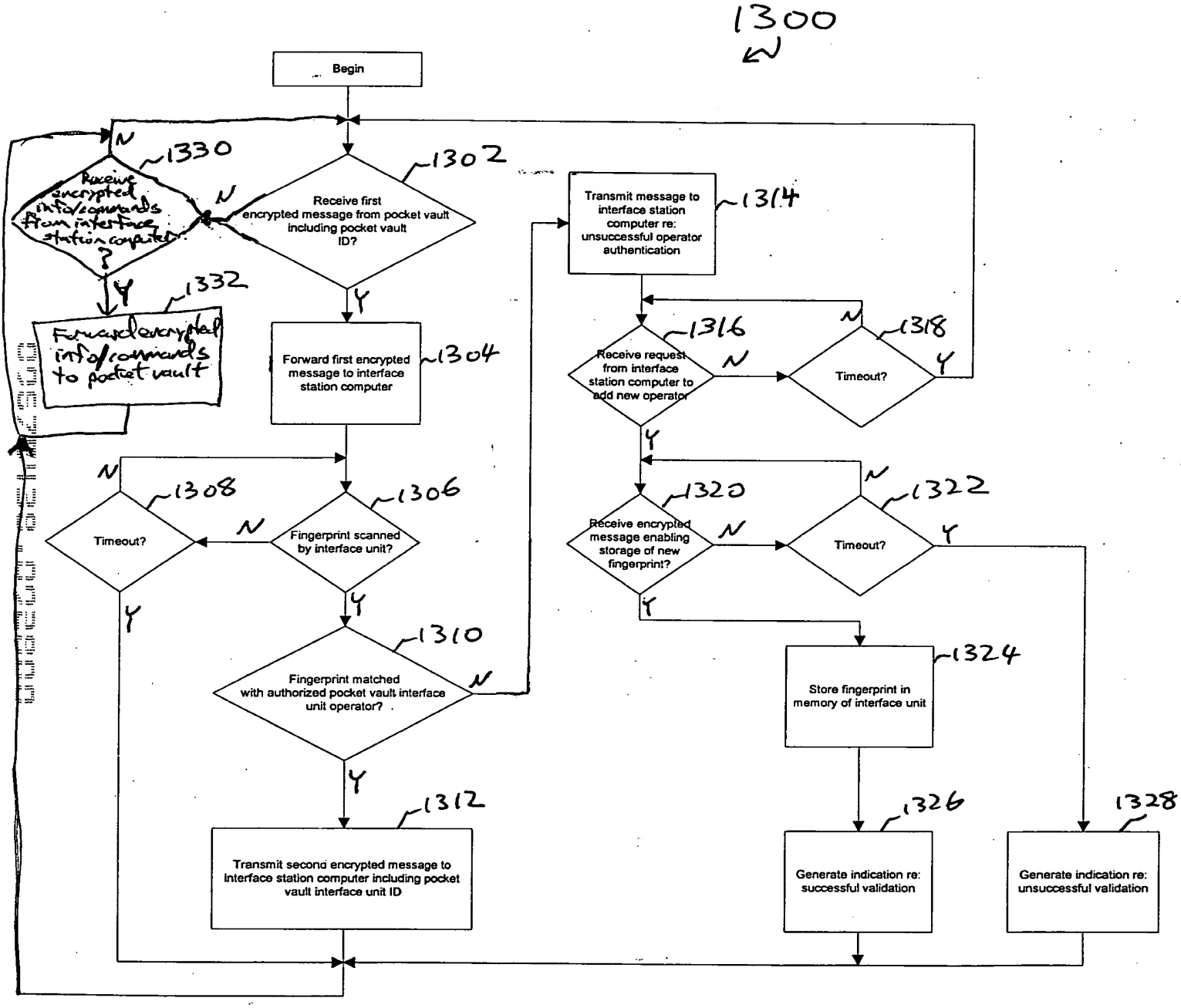
1300
Begin
1330
Receive encrypted info/commands from interface station computer?
N
Y
1332
Forward encrypted info/commands to pocket vault
1302
Receive first encrypted message from pocket vault including pocket vault ID?
Y
Forward first encrypted message to interface station computer
1304
N
1308
Timeout?
N
1306
Fingerprint scanned by interface unit?
Y
Y
1310
Fingerprint matched with authorized pocket vault interface unit operator?
N
Y
1312
Transmit second encrypted message to interface station computer including pocket vault interface unit ID
1314
Transmit message to interface station computer re: unsuccessful operator authentication
1316
Receive request from interface station computer to add new operator
N
1318
Timeout?
Y
Y
1320
Receive encrypted message enabling storage of new fingerprint?
N
1322
Timeout?
Y
Y
1324
Store fingerprint in memory of interface unit
1326
Generate indication re: successful validation
1328
Generate indication re: unsuccessful validation

Fig. 13

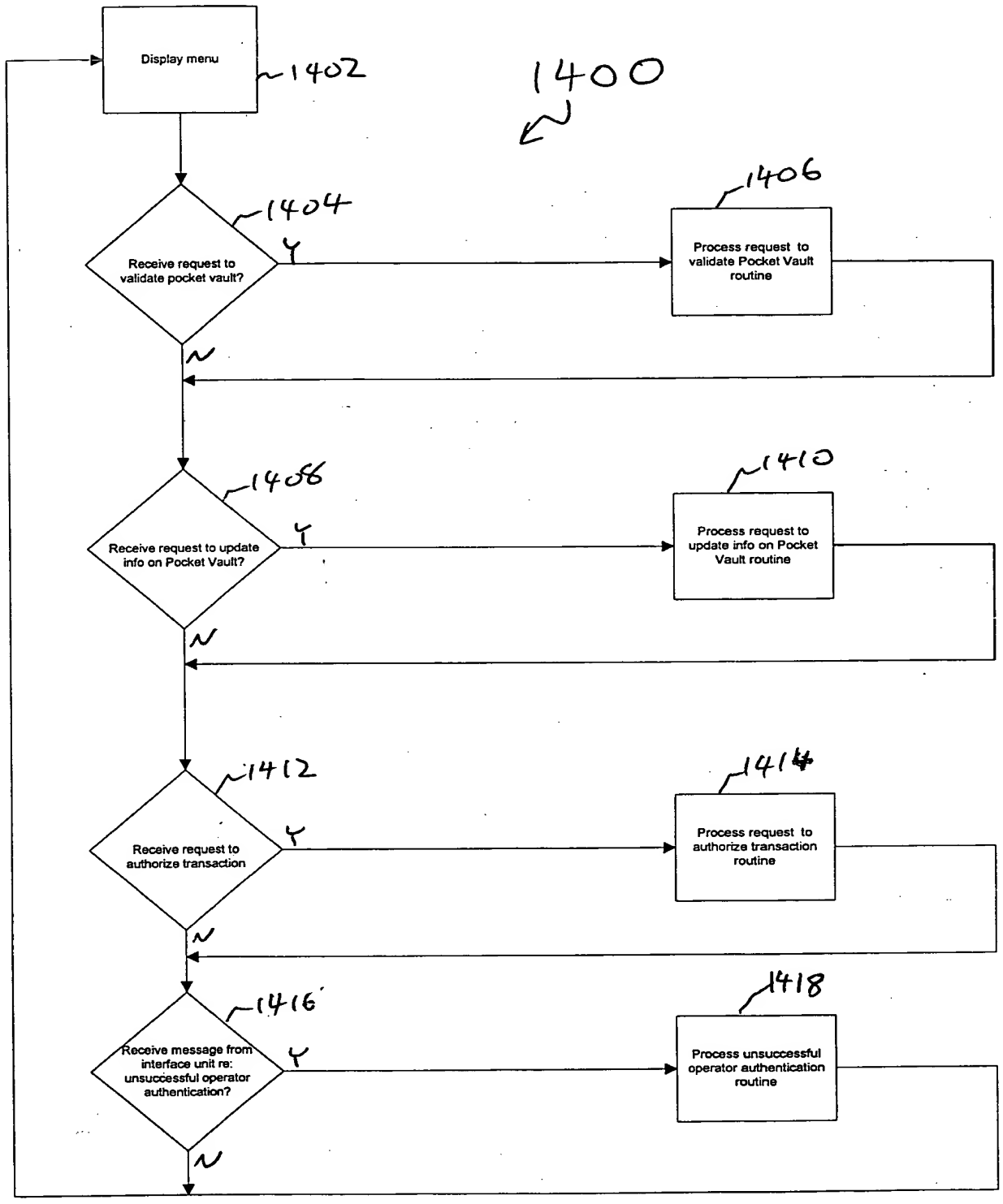
Display menu
1402
1400
1404
Receive request to validate pocket vault?
Y
1406
Process request to validate Pocket Vault routine
N
1408
Receive request to update info on Pocket Vault?
Y
1410
Process request to update info on Pocket Vault routine
N
1412
Receive request to authorize transaction
Y
1414
Process request to authorize transaction routine
N
1416
Receive message from interface unit re: unsuccessful operator authentication?
Y
1418
Process unsuccessful operator authentication routine
N

Fig. 14

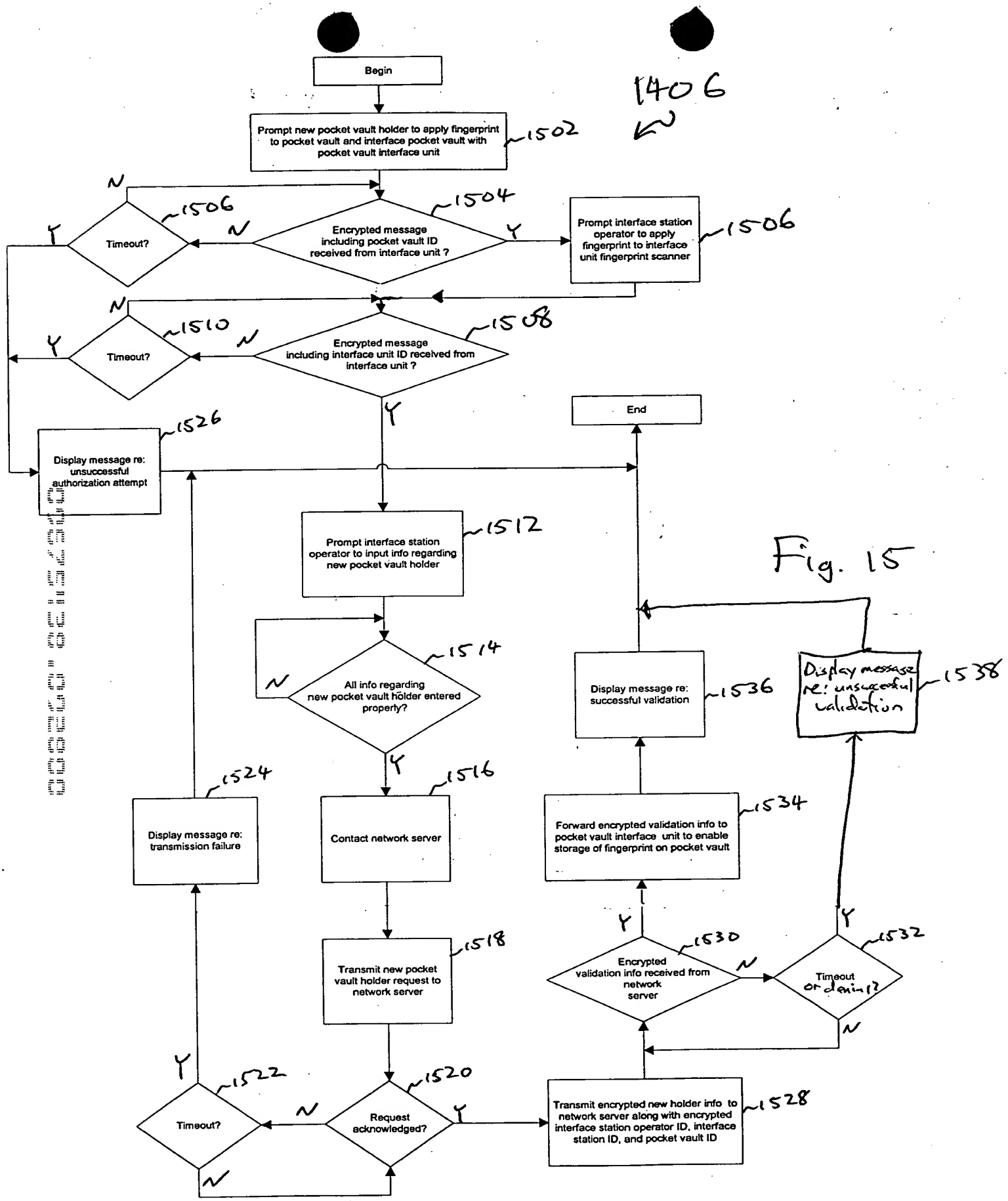
1406
Begin
Prompt new pocket vault holder to apply fingerprint to pocket vault and interface pocket vault with pocket vault interface unit
1502
Encrypted message including pocket vault ID received from interface unit ?
1504
Timeout?
1506
Prompt interface station operator to apply fingerprint to interface unit fingerprint scanner
1506
Encrypted message including interface unit ID received from interface unit ?
1508
Timeout?
1510
End
Display message re: unsuccessful authorization attempt
1526
Prompt interface station operator to input info regarding new pocket vault holder
1512
All info regarding new pocket vault holder entered properly?
1514
Display message re: transmission failure
1524
Contact network server
1516
Transmit new pocket vault holder request to network server
1518
Timeout?
1522
Request acknowledged?
1520
Transmit encrypted new holder info to network server along with encrypted interface station operator ID, interface station ID, and pocket vault ID
1528
Encrypted validation info received from network server
1530
Timeout or denial?
1532
Forward encrypted validation info to pocket vault interface unit to enable storage of fingerprint on pocket vault
1534
Display message re: successful validation
1536
Display message re: unsuccessful validation
1538
Y
N

Fig. 15

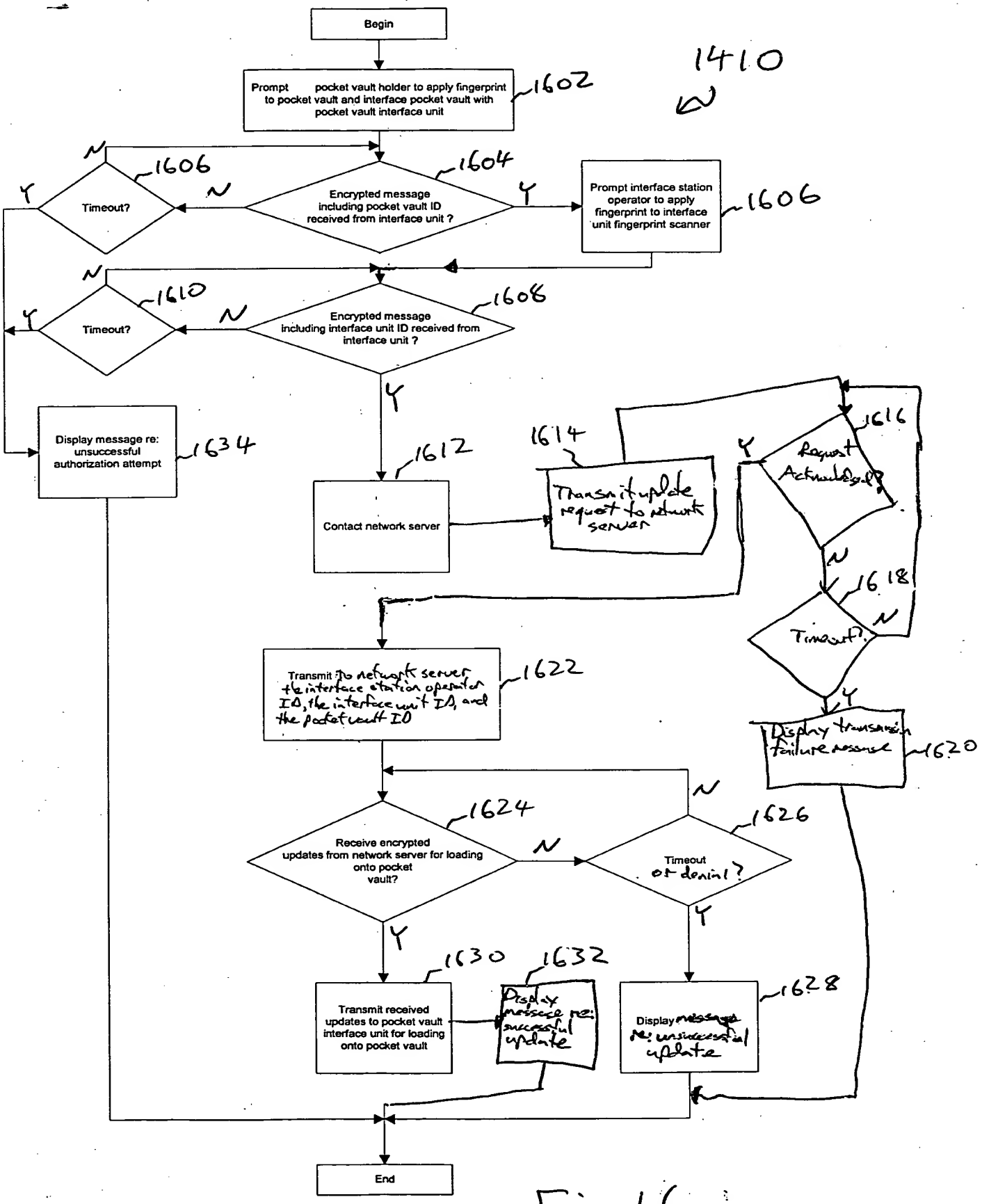
1410
Begin
Prompt pocket vault holder to apply fingerprint to pocket vault and interface pocket vault with pocket vault interface unit
1602
Encrypted message including pocket vault ID received from interface unit ?
1604
Timeout?
1606
Prompt interface station operator to apply fingerprint to interface unit fingerprint scanner
1606
Encrypted message including interface unit ID received from interface unit ?
1608
Timeout?
1610
Display message re: unsuccessful authorization attempt
1634
Contact network server
1612
Transmit update request to network server
1614
Request Acknowledgment?
1616
Timeout?
1618
Display transaction failure message
1620
Transmit to network server the interface station operator ID, the interface unit ID, and the pocket vault ID
1622
Receive encrypted updates from network server for loading onto pocket vault?
1624
Timeout or denial?
1626
Transmit received updates to pocket vault interface unit for loading onto pocket vault
1630
Display message re: successful update
1632
Display message re: unsuccessful update
1628
End

Fig. 16

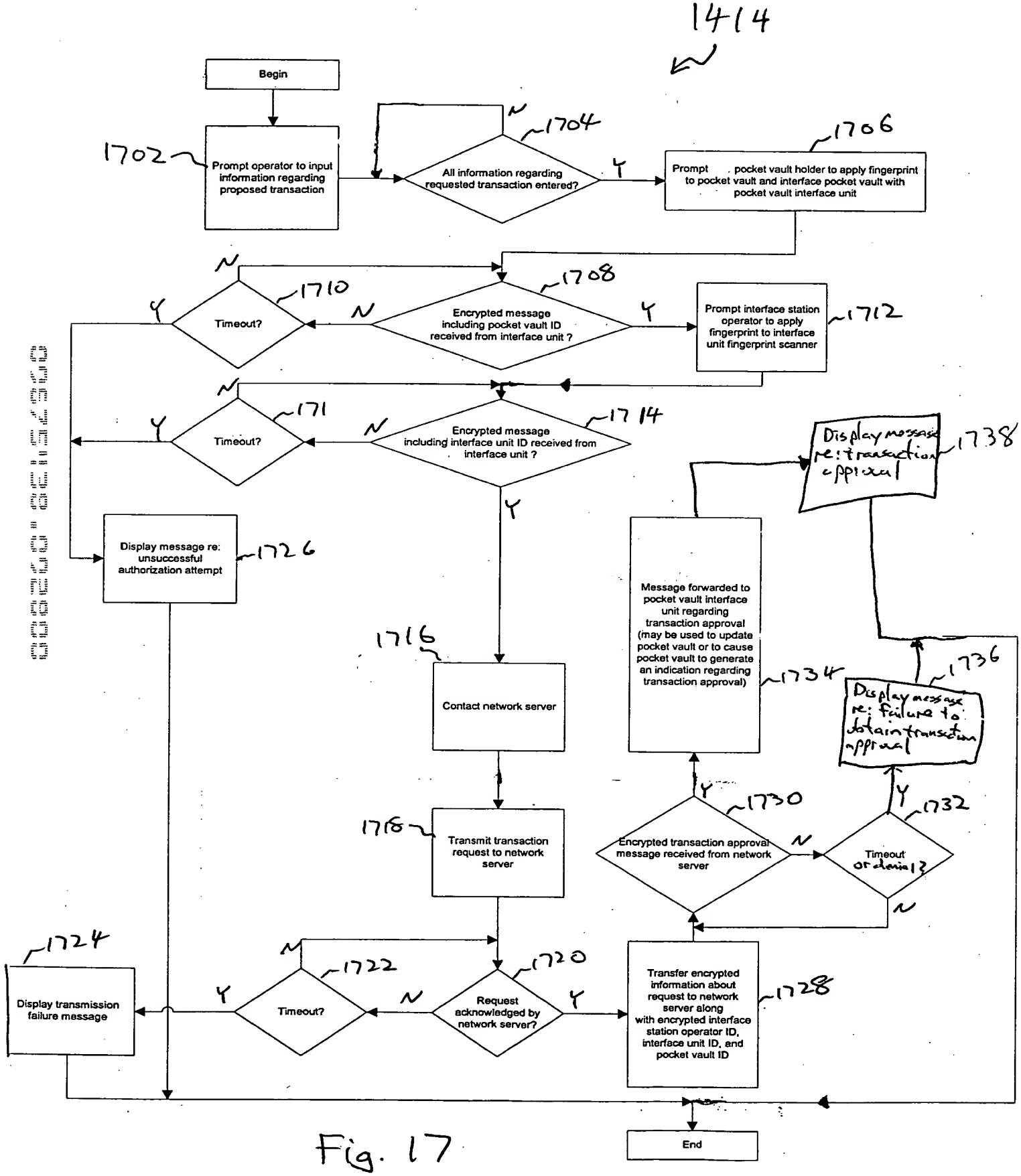
1414
Begin
1702
Prompt operator to input information regarding proposed transaction
1704
All information regarding requested transaction entered?
N
Y
1706
Prompt pocket vault holder to apply fingerprint to pocket vault and interface pocket vault with pocket vault interface unit
1708
Encrypted message including pocket vault ID received from interface unit ?
N
Y
1710
Timeout?
N
Y
1712
Prompt interface station operator to apply fingerprint to interface unit fingerprint scanner
1714
Encrypted message including interface unit ID received from interface unit ?
N
Y
Timeout?
N
Y
1726
Display message re: unsuccessful authorization attempt
1716
Contact network server
1718
Transmit transaction request to network server
1720
Request acknowledged by network server?
N
Y
1722
Timeout?
N
Y
1724
Display transmission failure message
1728
Transfer encrypted information about request to network server along with encrypted interface station operator ID, interface unit ID, and pocket vault ID
1730
Encrypted transaction approval message received from network server
N
Y
1732
Timeout or denial?
N
Y
1734
Message forwarded to pocket vault interface unit regarding transaction approval (may be used to update pocket vault or to cause pocket vault to generate an indication regarding transaction approval)
1736
Display message re: failure to obtain transaction approval
1738
Display message re: transaction approval
End

Fig. 17

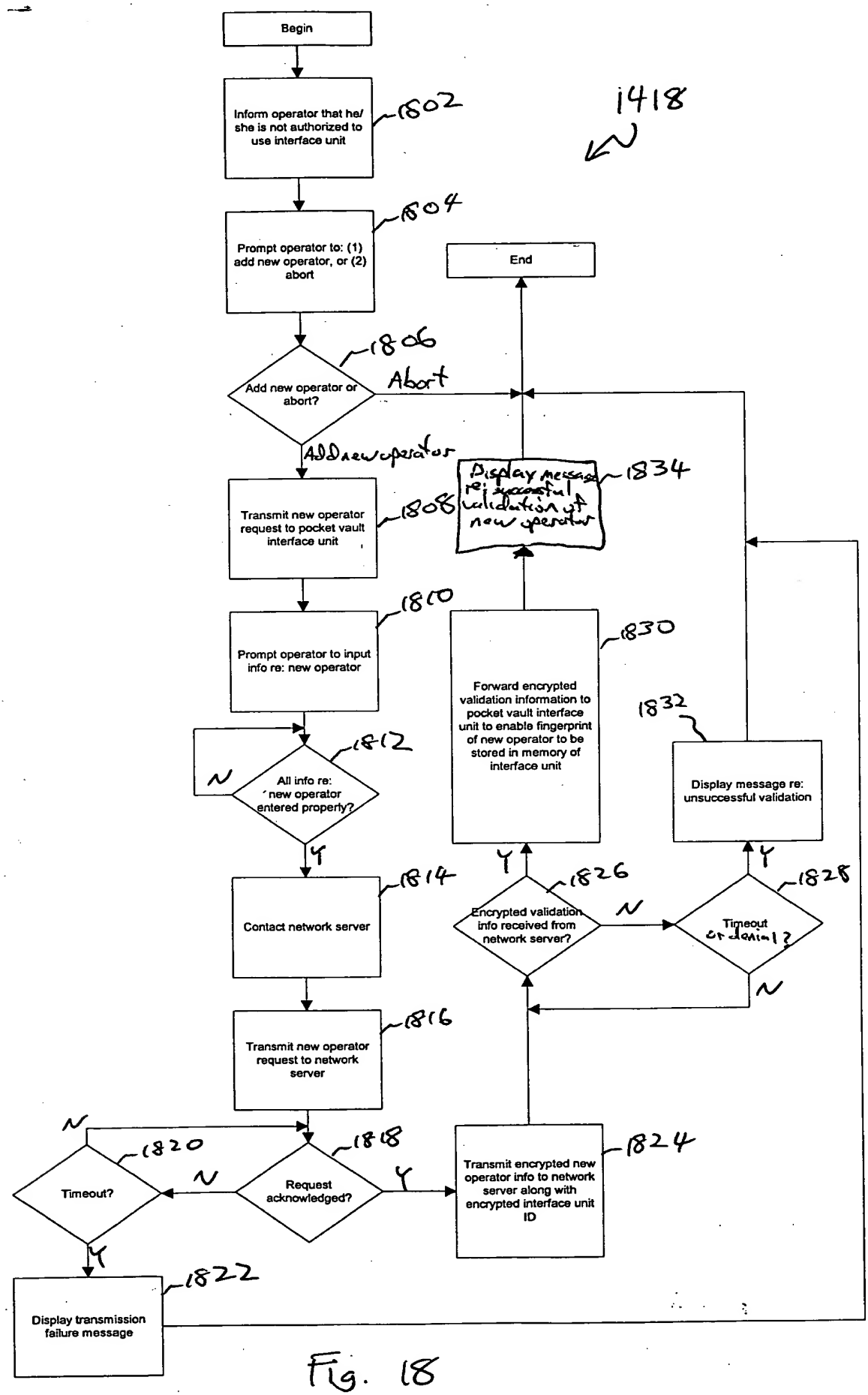
Begin
Inform operator that he/she is not authorized to use interface unit
1802
1418
Prompt operator to: (1) add new operator, or (2) abort
1804
End
Add new operator or abort?
1806
Abort
Add new operator
Transmit new operator request to pocket vault interface unit
1808
Display message re: successful validation of new operator
1834
Prompt operator to input info re: new operator
1810
Forward encrypted validation information to pocket vault interface unit to enable fingerprint of new operator to be stored in memory of interface unit
1830
1832
Display message re: unsuccessful validation
All info re: new operator entered properly?
1812
N
Y
Contact network server
1814
Encrypted validation info received from network server?
1826
Timeout or denial?
1828
Transmit new operator request to network server
1816
Timeout?
1820
Request acknowledged?
1818
Transmit encrypted new operator info to network server along with encrypted interface unit ID
1824
Display transmission failure message
1822

Fig. 18

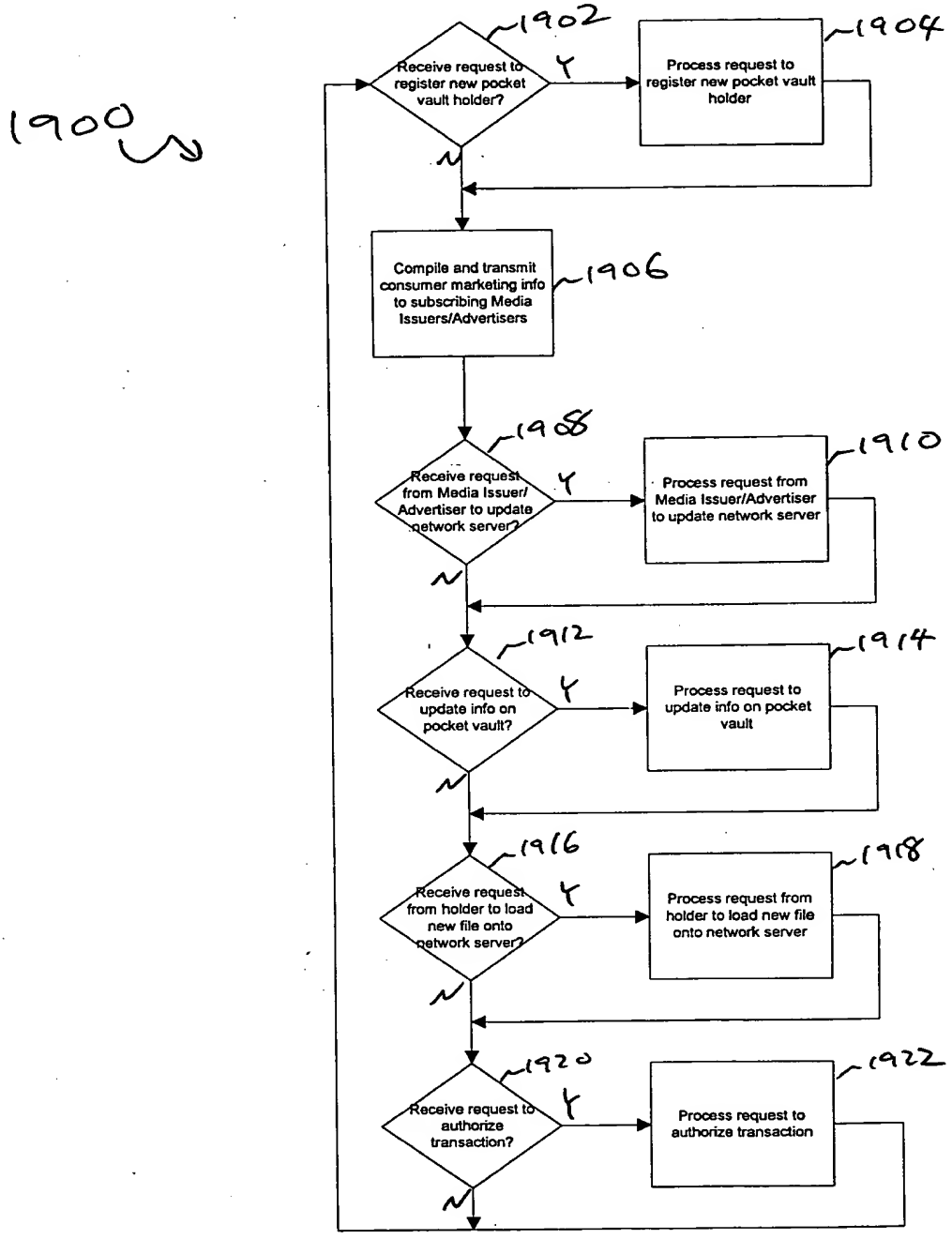
1900
1902
Receive request to register new pocket vault holder?
Y
1904
Process request to register new pocket vault holder
N
1906
Compile and transmit consumer marketing info to subscribing Media Issuers/Advertisers
1908
Receive request from Media Issuer/ Advertiser to update network server?
Y
1910
Process request from Media Issuer/Advertiser to update network server
N
1912
Receive request to update info on pocket vault?
Y
1914
Process request to update info on pocket vault
N
1916
Receive request from holder to load new file onto network server?
Y
1918
Process request from holder to load new file onto network server
N
1920
Receive request to authorize transaction?
Y
1922
Process request to authorize transaction
N

Fig. 19

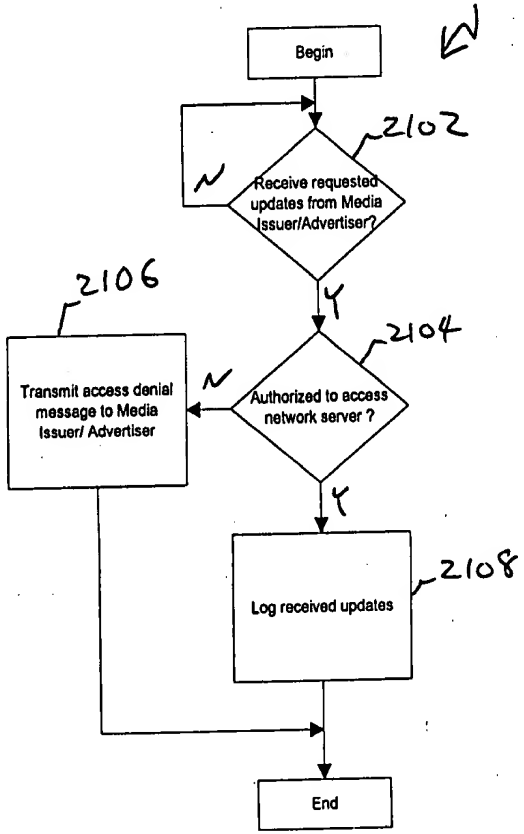

Fig. 21

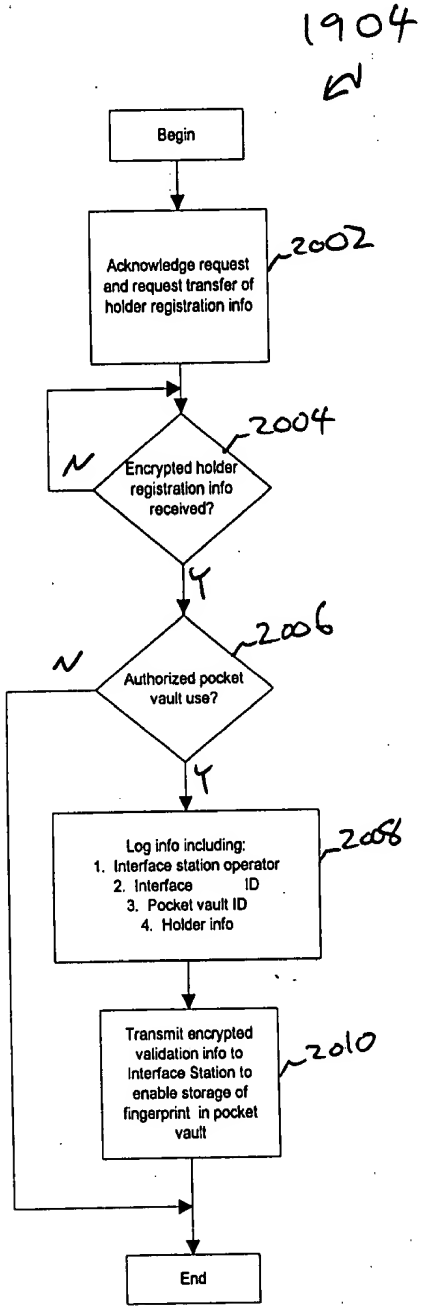

Fig. 20

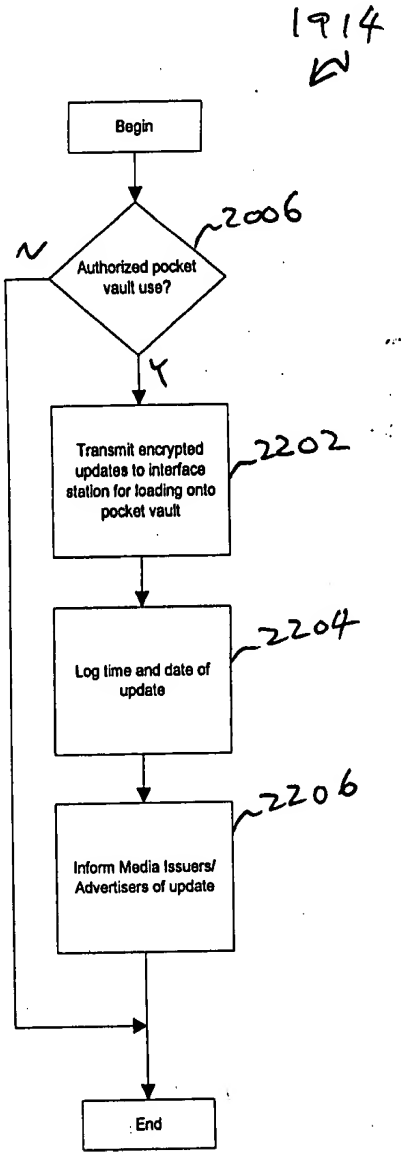

Fig. 22

1918

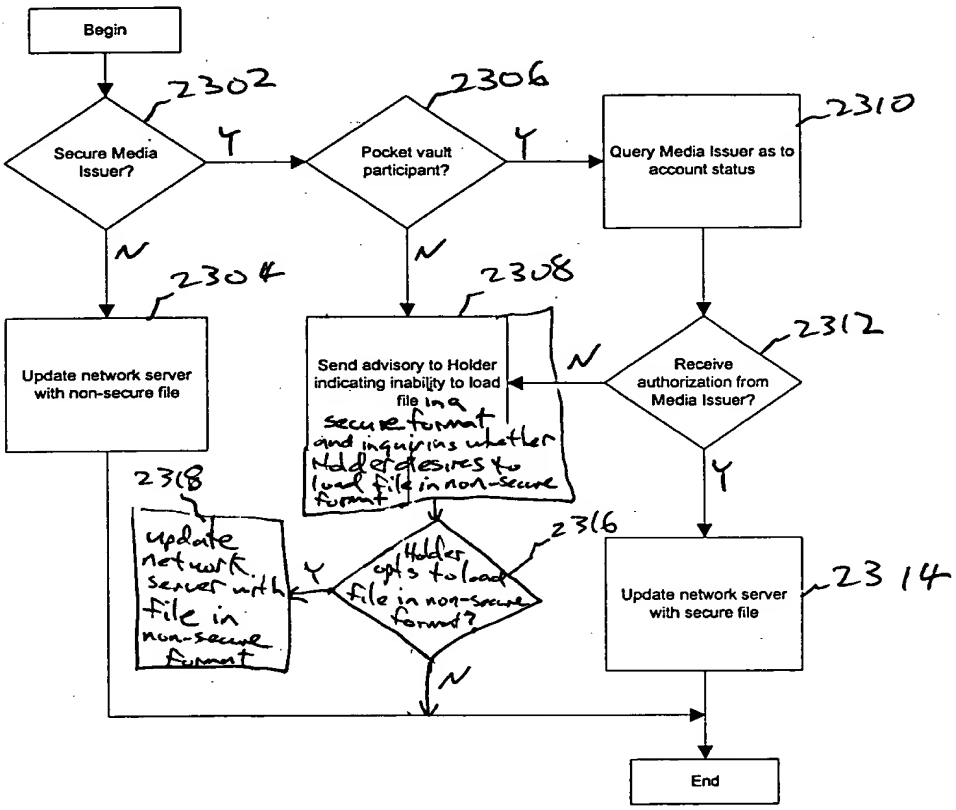
Begin
2302
Secure Media Issuer?
Y
2306
Pocket vault participant?
Y
2310
Query Media Issuer as to account status
N
2304
Update network server with non-secure file
N
2308
Send advisory to Holder indicating inability to load file in a secure format and inquiring whether Holder desires to load file in non-secure format
N
2312
Receive authorization from Media Issuer?
Y
2318
Update network server with file in non-secure format
Y
2316
Holder opts to load file in non-secure format?
N
2314
Update network server with secure file
End

Fig. 23

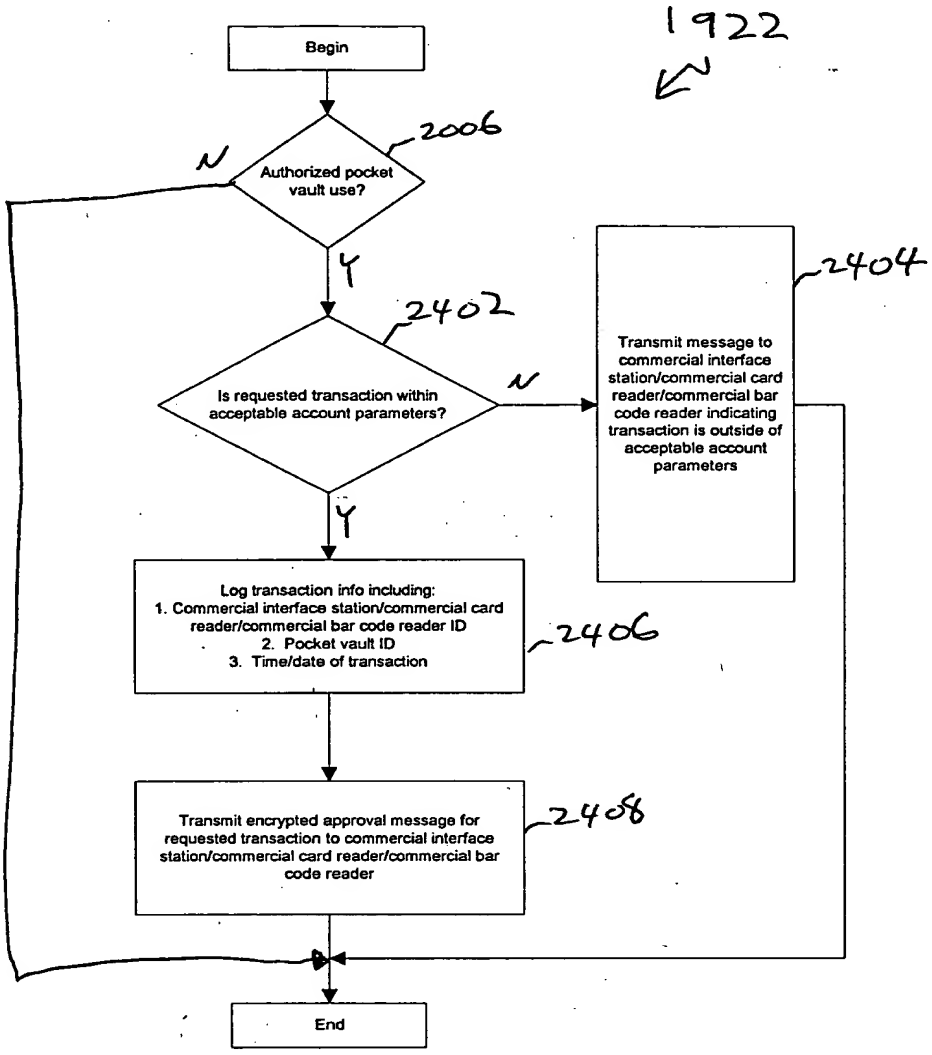
1922
Begin
2006
Authorized pocket vault use?
N
Y
2402
Is requested transaction within acceptable account parameters?
N
Y
2404
Transmit message to commercial interface station/commercial card reader/commercial bar code reader indicating transaction is outside of acceptable account parameters
Log transaction info including:
1. Commercial interface station/commercial card reader/commercial bar code reader ID
2. Pocket vault ID
3. Time/date of transaction
2406
Transmit encrypted approval message for requested transaction to commercial interface station/commercial card reader/commercial bar code reader
2408
End

Fig. 24

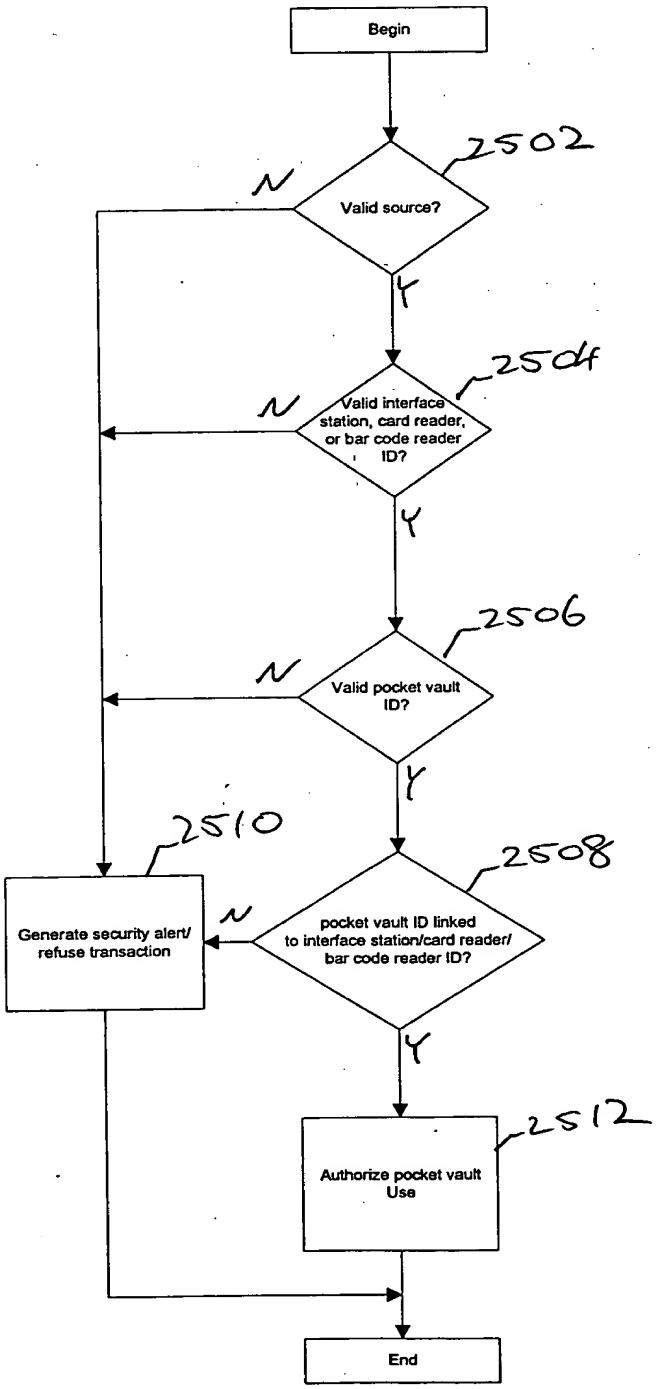
2006
Begin
2502
Valid source?
N
Y
2504
Valid interface station, card reader, or bar code reader ID?
N
Y
2506
Valid pocket vault ID?
N
Y
2508
pocket vault ID linked to interface station/card reader/ bar code reader ID?
N
Y
2510
Generate security alert/ refuse transaction
2512
Authorize pocket vault Use
End

Fig. 25

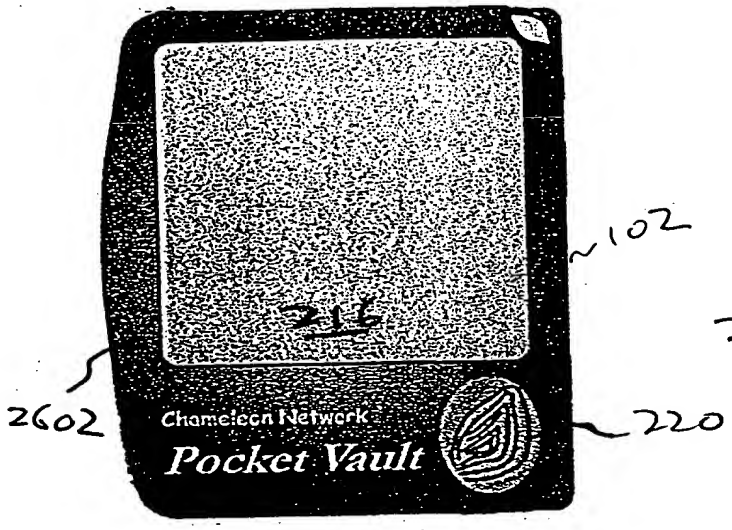

Fig. 26A

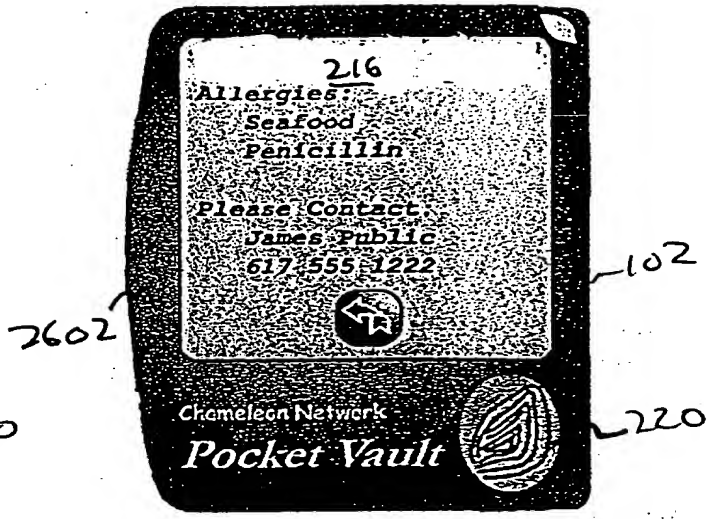

Fig. 26D

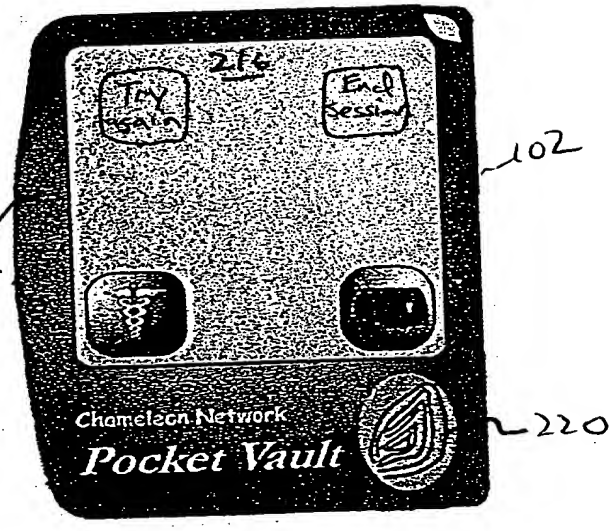

Fig. 26B

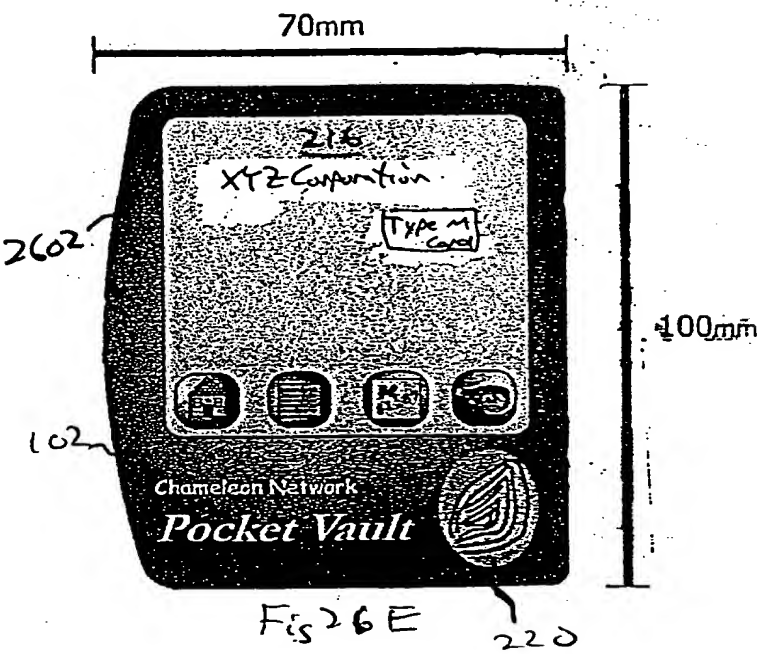

Fig. 26E

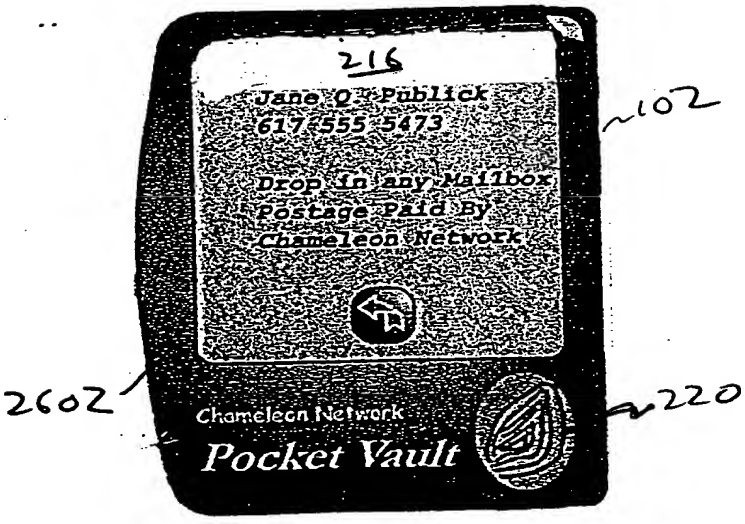

Fig. 26C

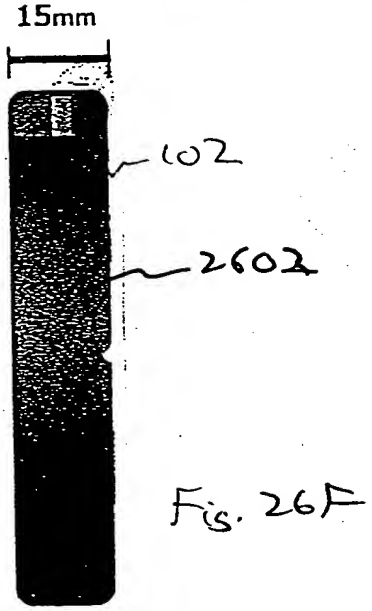

Fig. 26F

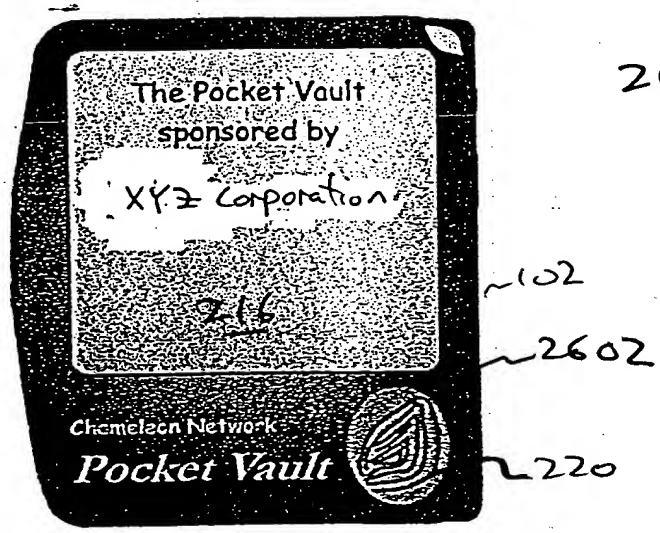

Fig. 26G

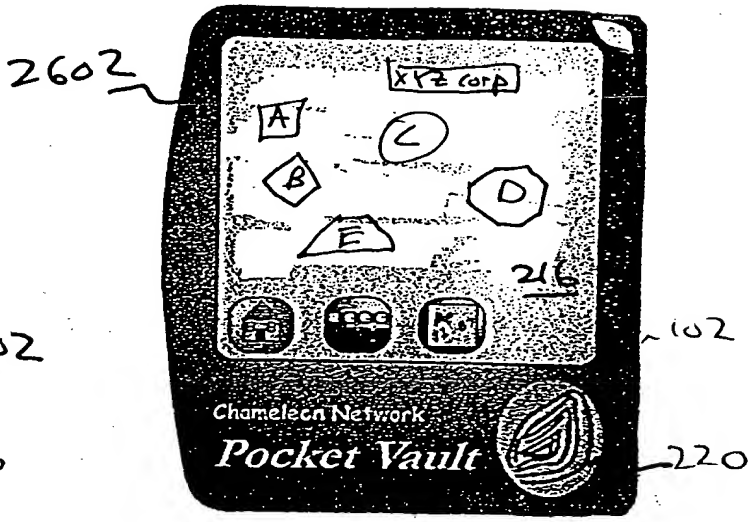

Fig. 26J

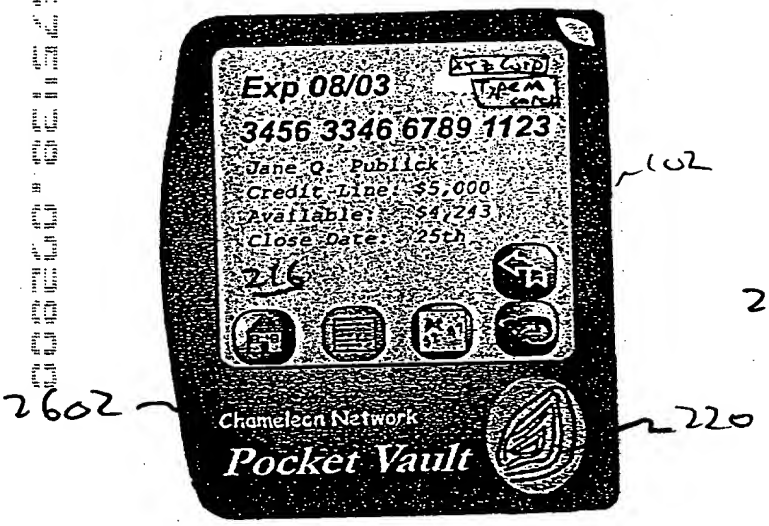

Fig. 26H

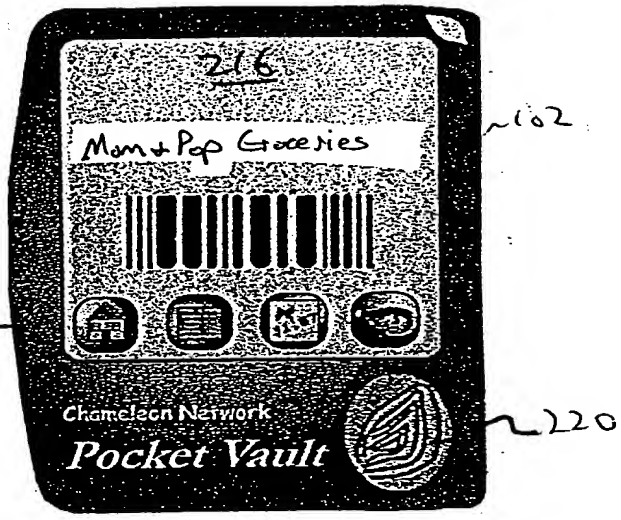

Fig. 26K

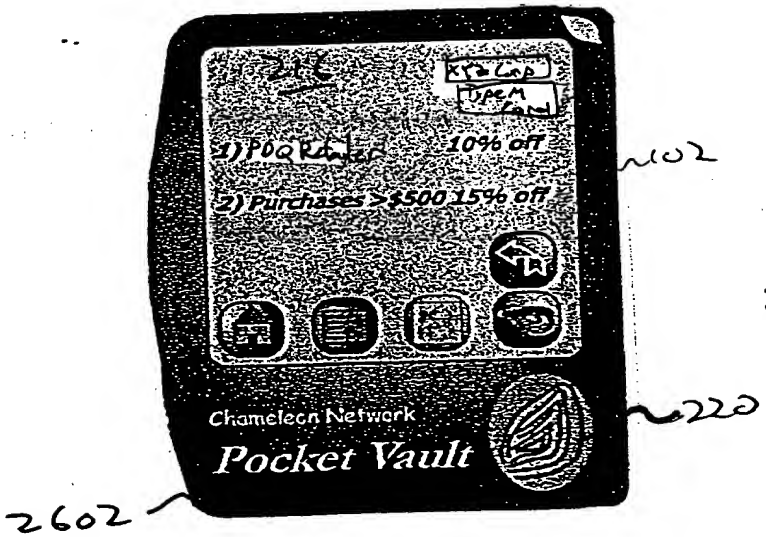

FIG 26I

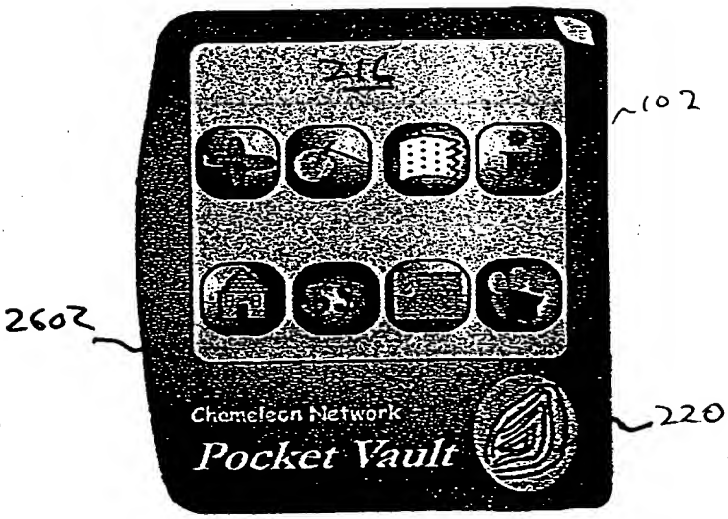

Fig. 26L

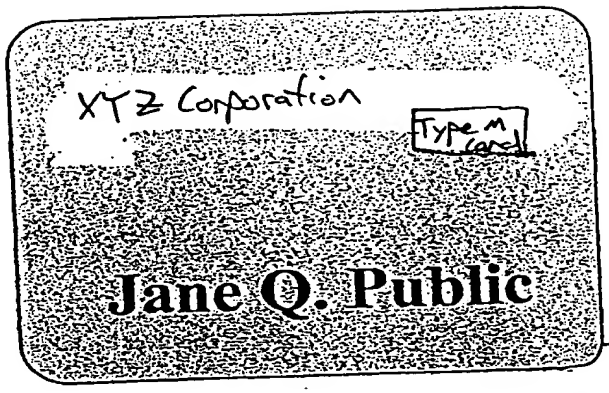

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Fig. 26M

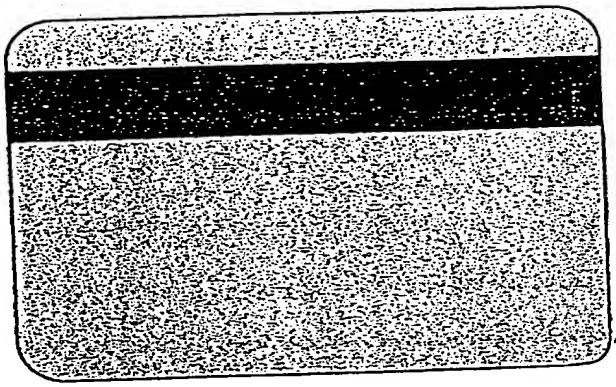

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Fig. 26N

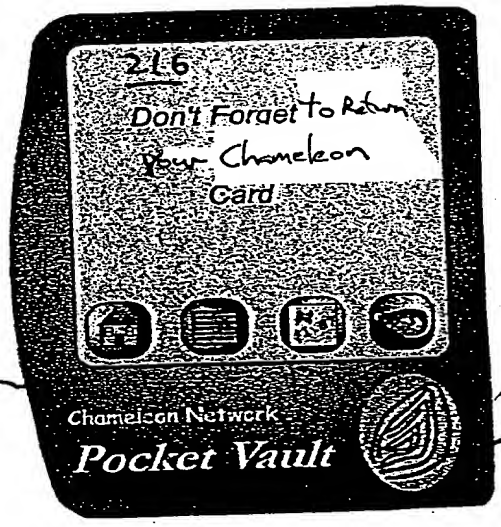

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Fig. 26O

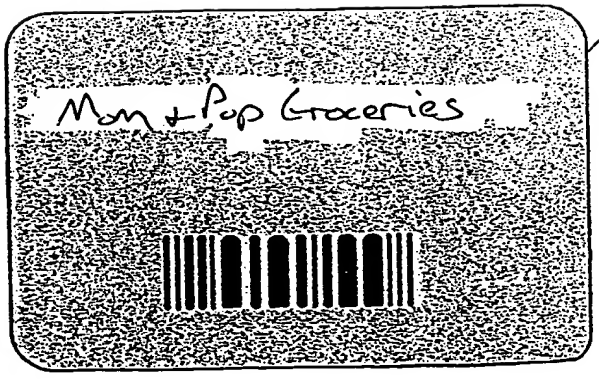

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Fig. 26P